

Chapter 8: Specialty Wood Products

Specialty wood products were chosen for this research for several reasons. One, they are traditional to central Appalachia and popular with many people in southwest Virginia. Two, products are commonly manufactured and seen for sale in the region. Three, market players were easily accessible for interviews because they appreciate and welcome attention paid to their activity. Conversely, market players of medicinal and herbal NTFPS are more secretive about disclosing their activities. Market players interviewed were producers, musicians, and music store owners in southwest Virginia.

Specialty wood products include furniture, carvings, musical instruments, bowls, walking sticks, and crafts. These products may not be considered actual NTFPs because of their timber origin. However, they can be considered a special forest product (SFP), a category which includes NTFPs and timber products other than those used for construction (Mater 1993). Specialty wood products are included in this research not as an NTFP but as a SFP which has similar affects on local people as other legitimate NTFPs, such as craft products and medicinal/herbal products. Research results for marketing systems of specialty wood products are presented and discussed in the same manner as NTFP crafts, and medicinal and herbal NTFPs.

The research shows that specialty wood products in southwest Virginia are made from decorative woods such as paper and yellow birch, aspen, cottonwood, basswood, poplar, oak, walnut, maple, ash, cherry, plum, apple, cedar, spruce, elm, butternut, diamond willow, and sumac. Research results for one group of specialty wood product, musical instruments, are described and discussed here. Musical instruments were selected as an important specialty wood product because of their popularity and availability of

information. Manufacturers of musical instruments are more open to interview than market players in other NTFP categories because they enjoy talking about an activity which is more than just a source of income. Manufacturers take pride in their work which may have taken many years to perfect.

8.1 Products

Research shows that musical instrument manufacture in southwest Virginia is an art that has evolved over many years. The first and second generations living in Appalachia were occupied in mountain existence and had little time for entertainment and much less for making instruments. However, there were some improvised fiddles made out of gourds and empty cigar boxes. During the 1800s and early 1900s, musical instrument manufacture became more common as Appalachia became increasingly populated. Throughout the 1900s Appalachian folk music brought to fame the instruments handcrafted from the region's own resources (Irving 1997). Some of the most commonly made instruments are highlighted and described below.

Mouth Bow – The mouth bow, often made of hickory or red cedar, is a simple wooden bow having a string or wire tied to each end. The mouth bow is positioned by placing one end of the bow in the mouth. Rhythm is created by plucking the string and pitch adjusted by increasing or decreasing the size of the mouth cavity (Irving 1997).

Fiddle – The fiddle is the most widely accepted Appalachian mountain instrument outside of the region. Settlers brought the first fiddles from Europe and began manufacturing them from tree species native to Appalachia. The fiddle is claimed to be the only instrument treasured equally in mansions of rich landowners and in one room, dirt floor Appalachian cabins. Fiddle quality varies widely and price can range from ten dollars to a quarter of a million dollars (Irving 1997).

Banjo – The banjo is known as the only musical instrument indigenous to America. The first banjo made in Appalachia was made by Joel Walker Sweeney, born in 1810 in Tennessee. Banjo popularity spread fast and Sweeney played in surrounding states and Europe. Soon, several American firms started manufacturing banjos. However, mountain people were not accustomed to store bought merchandise and preferred making their own (Conway 1995).

Dulcimer – The dulcimer, often made of pine or cherry, has its origins in northern Europe and has had a spotty existence in North America. It was first found in Pennsylvania in the 1770s and later in Appalachia, where the dulcimer acquired a curvier shape, less rectangular than the dulcimer of Pennsylvania. This instrument is most common in Lee and Scott counties of southwest Virginia than any other county in Appalachia. The dulcimer gained popularity after the civil war but declined during the early 1900s. A noted Appalachian researcher, Josiah Combs, remarked in 1925 that the dulcimer is an instrument formerly used but rapidly falling into decay. Today, dulcimer popularity is revived and it is frequently sold in southwest Virginia (Irving 1997).

Guitar – The guitar came late to Appalachia in comparison with the other instruments. It wasn't until well into the 20th century that guitar gained acceptance and in the 1930s guitar was commonplace. Guitar quickly became a vital part of the stringed band highly popular in Appalachia. Today, most guitars are bought from dealers outside of southwest Virginia. However, a few accomplished manufacturers still exist in the region and make use of the supply of curly maple from forested mountains (Irving 1997).

Based on observations during field research, musical instruments such as those previously described are often products of materials obtained from various locations. Species native to southwest Virginia are curly maple (*Acer* spp.), black walnut (*Juglans nigra*), Appalachian red spruce (*Picea rubens*), and Eastern redcedar (*Juniperus virginiana*). Other species commonly used and imported into southwest Virginia are Western redcedar (*Thuja plicata*), redwood (*Sequoia sempervirens*), mahogany (*Sweetinia macrophylla*),

and ebony (*Diospyros virginiana*). Wood characteristics such as grain pattern, color, strength, and hardness influence the choice of woods for instrument manufacture. These characteristics determine the instrument's aesthetic beauty and sound quality. For example, some claim that Western redcedar is better for making instruments than Eastern redcedar because its greater hardness gives instruments a better sound. As a result, serious instrument manufacturers who demand the highest quality materials will always use Western instead of Eastern redcedar. Manufacturers are rarely in a situation of lack of supply although sometimes must seek out locations or suppliers from which to cut or buy wood.

8.3 Value Addition and Market Outlets

Market outlets for musical instruments made in southwest Virginia depend on the quality of the instrument. Since instrument making is highly traditional, there are many who have made instruments but only a few who have mastered the art and created a name for themselves. Musical instrument making is highly competitive and festivals, such as bluegrass festivals, are held where makers show off and compare instrument quality. Only the highest quality instruments are bought by musicians for their own use or by dealers for sale in music stores around the country. These instruments are usually made by well-known makers who have years of experience making instruments. Instruments of lower quality are kept in family collections. Often the maker continues making instruments to improve on quality based on observations of other instruments and suggestions from other makers and buyers.

Some musical instrument makers are contracted by a larger manufacturer to make instrument parts. The parts are then transported to the manufacturer which assembles the instrument from parts having origins throughout the United States and world. One such maker has a small workshop in the mountains of southwest Virginia to manufacture guitar tops of curly maple for Gibson. Gibson is a large instrument manufacturer based in

Nashville, Tennessee, famous for its guitars, banjos, mandolins, and other stringed instruments. The owner purchases curly maple from scattered places in southwest Virginia and from outside of the state. Curly maple has grain prized for its beauty in a finished and polished instrument. For this reason Gibson contracts makers who have access to a supply of curly maple, such that exists in the forests of southwest Virginia. The relatively rare curly grain results from abrupt and repeated right and left deviations from the vertical in fiber alignment, caused by tree growth in windy and steep mountain slopes.

Most makers do not have contracts with large manufacturers because of the small scale of their operation and limited experience and expertise. In addition, large manufacturers choose very selectively their suppliers from all over the world and most makers simply would not have a chance to contract work. Although many famous name instruments reach a wider global market, locally made instruments of high quality are also demanded. For example, one experienced and locally renowned mandolin maker has a waiting list of people wishing to purchase his curly maple mandolins. Dulcimers are the only instruments which are seen in gift stores in tourist locations such as Abingdon, and at local craft shows and festivals. These are also the only instrument indigenous to the region. Dulcimers are typically less expensive than other instruments and are a popular traditional Appalachian item bought by tourists. As a result, much marketing of dulcimers is directed toward tourists who collect novelties than serious musicians.

Research found that value addition on musical instruments in southwest Virginia is limited for makers who are contracted to supply parts to large manufacturers. These makers obtain the wood and cut out the part while the manufacturer assembles, finishes, and polishes the finished instrument. Other makers which complete the finished instrument artistically finish and decorate their instrument. These additions are not of local NTFPs, but may include adding an imported wooden part or inlaid mother of pearl designs in the wood. Dulcimer makers may add value by selling their instruments together with music sheets and instructions, since many buyers have never played the instrument before. These

music sheets often include traditional folk tunes which appeal to tourists who seek traditional Appalachian items.

8.4 Pricing

The research shows that prices for musical instruments vary with the type of instrument, quality, length of time needed for manufacture, and cost of parts. One particular banjo maker spends about one hundred hours to make two or three banjos at the same time. He sells to individual buyers at prices of at least two thousand dollars per banjo, depending on the quality of parts and designs, such as mother-of pearl inlays. Dulcimers are priced much lower to be attractive to tourists and also require less time in manufacture. Depending on size and quality, dulcimers are locally priced from fifty to two hundred dollars.

8.5 Promotion

Observations during field research indicate that musical instruments are promoted by local makers through word of mouth. A maker gains popularity by bringing instruments to local and regional bluegrass and country music festivals. These annual festivals provide exposure and friendly competition for instrument makers. Most makers typically do not produce instruments on a large enough scale to advertise their products because their quality is not competitive. In addition, only the best quality instruments are highly demanded. Still, the maker may have a waiting list of customers without advertising.

Musical instrument stores advertise more purposefully than individual makers. These businesses may advertise through radio and newspapers and by creating a reputation of quality products and service. Lessons are often given at the stores which draw customers

to purchase instruments. However, most of the instruments sold are not locally made but are brand name instruments manufactured in other parts of the United States and the world. The manufacturers of these popular instruments often distribute brochures about the instruments to music stores where customers take them freely. Local makers do not have the resources or a wide enough market to invest in literature.

8.6 Distribution and Marketing Chains

Research has enabled the marketing chain for musical instruments to be constructed based on observations and interviews with market players. Figure 8.1 is a diagram of the marketing chains. The first level of the chain is the timber harvester who cuts the tree from which wood for the total instrument or portions originate. The log is either bought and sawed by the instrument manufacturer or bought by a sawmill which saws the log into boards and sells them to the instrument maker. Since instrument manufacture uses a variety of woods from around the world, the manufacturer is likely to search for suitable raw material within and outside of southwest Virginia. Curly maple, Appalachian red spruce, Eastern red cedar, and black walnut are common species obtained in southwest Virginia. Others such as redwood, Western red cedar, mahogany, and ebony must be imported from other parts of the world. A manufacturer typically orders these wood species from tropical wood dealers in the United States.

Instrument manufacturers can be divided into two categories in the marketing chain. One is a manufacturer of a finished instrument. This manufacturer buys all woods, parts, and finishing materials and establishes a price based on labor time and cost of materials. This manufacturer may sell directly to individual customers or to retail music and instrument stores where consumers buy instruments. This maker may take orders for instruments and have a waiting list of those wishing to buy instruments. Local retail stores which buy instruments mark up the price to allow a profit margin. The second type of manufacturer

makes instrument parts for sale to a larger manufacturer which assembles the finished product. Instrument parts made in southwest Virginia include guitar and mandolin tops and/or backs from local curly maple and stringed instrument necks. The finished product is usually sold to retail music and instrument stores around the country or exported.

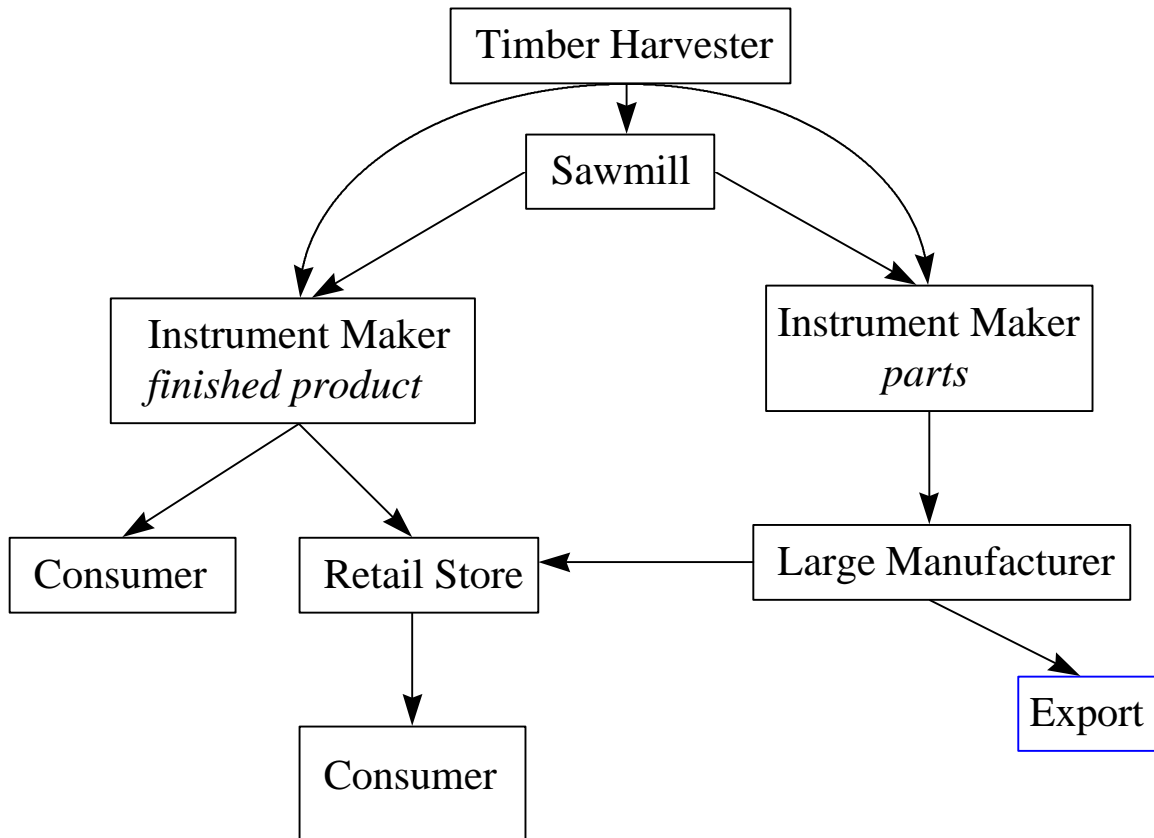


Figure 8.1 Marketing chains for musical instruments manufactured in southwest Virginia

Chapter 9: Edible Forest Products

Edible forest products were selected to be a category of NTFP for this research because it was expected that they would be commonly marketed in southwest Virginia. Nearby regions of Ohio and West Virginia are the sources of some highly traded edible products, in particular mushrooms (Bailey 1997). Similarly, it was expected that mushrooms and other edible products would be important in the NTFP trade from southwest Virginia. However, research results from 1997 do not show edible forest products to be traded at any observable level. Market players (collectors, dealers, processors, or sellers) were not found in the region despite the natural existence in local forests of various edible products described below. People in the region talk of the existence edible forest products. However, based on the lack of market players and markets in southwest Virginia, it can be concluded that edible forest products are mainly collected for consumption within the household and not marketed either locally or outside of the region.

The following chapter gives information on edible products potentially available in southwest Virginia's forests. Two categories are discussed: i) berries, fruits, and nuts; and ii) mushrooms. Research shows that these products are currently not traded. Therefore, information presented in this chapter is not based on interviews with market players in southwest Virginia, but on information obtained through literature review. Examples given are from locations outside of southwest Virginia. This information is intended to provide ideas for development of a trade in edible forest products from southwest Virginia. Based on the literature review, these products have helped provide additional household income in other parts of the United States. For example, Pennsylvania berry growers market jams in local farmers' markets and people in West Virginia market collected seasonal mushrooms called ramps. In southern Appalachian states, some people

grow market nuts grown from their own trees. Similar opportunities may exist for edible forest products marketing in southwest Virginia. This chapter describes edible products potentially but not currently grown in southwest Virginia

9.1 Importance of Edible Forest Products

For untold centuries people around the world have collected edible forest products for household consumption or market sale. Products include mushrooms, seeds, nuts, fruits, berries, wildlife, and roots. Today, the world's demand for edible forest products is mainly supplied by cultivation. However, many people continue to collect edible forest products for their own household use. This chapter describes of two categories of edible forest products: 1) berries, fruits, and nuts; and 2) mushrooms.

Based on conversations with local people, edible forest products are collected in southwest Virginia for household consumption only. Most marketed products have been cultivated since wild collected products cannot be collected in sufficient quantities to satisfy market demand. Cultivation of edible nut trees in southwest Virginia holds market potential. The Appalachian climate is suitable for growing nuts of high demand such as walnuts, almonds, pecans, and hazelnuts (Rosengarten 1984). Fruits and berries are usually cultivated in gardens and wild collection will continue to be limited to household consumption due to low volumes. Potential exists for increased cultivation of several products, such as shiitake mushroom, a product experiencing increased demand worldwide. These products are described in depth in the following sections.

9.2 Fruits, Berries, and Nuts

Forest-collected fruits, berries, and nuts are important sources of food for some rural households. Cultivation has nearly replaced wild collection and most marketed fruits,

berries, and nuts are cultivated products. However, collection from the forest is a traditional activity for some rural households and provides a nutritious and tasty source of food. Common fruits and berries found in southwest Virginia are wild blueberries (*Vaccinium angustifolium*), crab apple (*Rosaceae Malus* spp.), brambleberries (*Rubus* spp.), grapes (*Vitaceae Vitus* spp.), elderberries (*Caprifoliaceae Sambucus* spp.), huckleberries (*Ericaceae Gaylussacia* spp.), cranberries (*Ericaceae*), and paw paw fruit (*Asimina triloba*). These products can be consumed fresh, canned, or used to make pies and jams. Wild collection from the forest rarely provides enough volume to make market sale possible and profitable. As a result, most wild collected fruits and berries are consumed within the household only.

Nuts have also been an important food source for many centuries around the world and in Appalachia. A nut is a seed embryo encased in a hard shell containing high amounts of protein and fat to nourish the seedling plant in initial growth stages. The nut embryo has highly concentrated nutritional properties which are beneficial to rural dwellers who may have limited access to healthful foods. Ancient societies have typically depended on collection of food and found nuts to be a valuable energy source. Archaeological studies have discovered the remains of ancient nut shells after the nut flesh had been eaten in some locations of ancient Native American settlements (Rosengarten 1984). Today, nuts can be important source of food for rural communities and forest dwellers around the world (Wickens 1995). However, they are usually only available in small quantities in areas where cultivation is not practiced.

Edible nuts potentially collected in Appalachian forests include acorns (*Quercus* spp.), almonds (*Prunus dulcis*), chestnuts (*Castanea mollissima*), hazelnuts (*Corylus americana* and *C. cornuta*), hickory nuts (*Carya ovata* and *C. laciniosa*), and walnuts (*Juglans nigra*). The most important and highly traded nuts in the United States are peanuts, almonds, hazelnuts, cashews, walnuts, pecans, Brazil nuts, pistachios, and macadamias (Rosengarten 1984). Forest collection is not likely to provide quantities large enough to

make marketing possible or profitable. As a result, marketed nuts are from cultivated trees. However, wild collected nuts in southwest Virginia are traditionally consumed on a limited basis in the household. Not all fruits, berries, and nuts are edible and only experienced and knowledgeable collectors should collect nuts from the forest for human consumption.

9.2.1 Value Addition

Fruits and berries are often sold fresh during their ripening season. Forms of value addition include freezing, dehydrating, jams and jellies, and including them in baked goods. Marketed nuts, usually found in groceries, supermarkets, and health food stores, have been processed in a variety of potential ways which add value. Nuts can be sold shelled or unshelled. Cashew is the only nut always sold unshelled because the shell contains irritating juices that can blister skin like poison ivy. Other processing treatments include cleaning, drying, curing, bleaching, coloring, waxing, slicing or slivering, roasting, freezing, salting, blanching, a process of immersing a nut in scalding water for several minutes to remove the outer skin and make the nut lighter in color. The most common colored nut is the imported red pistachio, colored by a dye approved by the United States Food and Drug Administration. Cultivators in southwest Virginia could likewise dye nuts with approved dyes as a method of product differentiation. Despite the many processing possibilities, there has been a recent increase in the demand for raw nuts (unroasted and unsalted).

9.3 Mushrooms

There are fifty thousand species of mushroom in the world and two thousand of these are edible. However, there are only about twenty-five species widely accepted as human food (Kannaiyan and Ramasamy 1980). In the past, mushrooms have been considered a delicacy and were expensive with limited availability. Today, the mushroom market is steadily expanding as mushroom popularity grows and human population increases around

the world. (Dix, Freed, and Buck 1996). Some believe that mushrooms represent one of the world's greatest untapped resources of nutrients and palatable foods.

9.3.1 Ecology

Mushrooms are the fruits of fungi which appear in the last stage of fungal growth. They are reproduced and spread by spores, microscopic fungal seeds which are released from the mature mushrooms. Spores must land on a suitable growing substrate to begin the fungal developmental process (Chang and Miles 1989). More than ninety percent of growth occurs beneath the growing substrate as microscopic filaments, called hyphae, multiply and excrete an enzyme which breaks down organic matter into usable nutrients. Since these fungi do not have chlorophyll they cannot manufacture food and instead obtain nutrients by breaking down organic matter (Binding 1972). As a result, mushrooms play important roles in decomposition. Forests are ideal locations for the growth of mushrooms because great amount of organic matter lies on forest floors (Kannaiyan and Ramasamy 1980).

9.3.2 Common Mushrooms

The literature review of mushrooms has revealed several mushrooms most commonly marketed in some parts of the United States. Although not presently observable in southwest Virginia, these species may have potential for cultivation as a marketable product based on success in other regions of the United States. These mushrooms are described below as either cultivated or wild collected products. Most marketed mushrooms are cultivated for quality control and to grow volumes large enough to meet market demands (Cotter et al. 1986). Wild collection requires great experience and skill in mushroom identification because some edible mushrooms are similar to poisonous species. Although many wild and cultivated mushroom species are collected in the United States, the most commercially important ones are:

Chanterelle, wild (*Cantharellus cibarius*) – The common golden chanterelle is the most important in terms of volume collected and income generated. From Oregon and Washington alone four million pounds may be collected annually. Most chanterelles are canned and approximately twelve percent marketed fresh (Binding 1972).

Boletus, wild (*Boletus edulis*) – Boletus is one of the most valuable and sought after mushrooms. However, marketing boletus is difficult because fly larvea from the base of the stem destroy the mushroom rapidly (Binding 1972).

Morel, wild (*Morchella conica* and *Morchella esculenta*)

Matsutake, wild (*Armillaria ponderosa* and *Tricholoma matsutake*)

Hedgehog, wild (*Dentinum repandum*)

Shiitake, cultivated (*Lentinus edodes*)

9.3.3 Importance of Shiitake in Southwest Virginia

Shiitake mushrooms (*Lentinus edodes*) have high market potential in all areas of the United States because it has unusually high nutrition and can grow in most regions with proper cultivation techniques (Thomas and Schumann 1993). Shiitake is becoming an alternate crop especially in Virginia because it is easy to cultivate in the Appalachian climate (Cotter et al. 1986). Virginia's climate is very similar to Japan's, where ninety percent of the world's shiitake supply is produced. Therefore, it appears that great potential exists for Virginia to increase shiitake production. Also, the availability of hardwood in Virginia makes shiitake growing a good source of secondary income (Cotter et al. 1986).

Fresh and dried shiitake may be marketed in oriental restaurants and oriental, gourmet, and health food stores. Most markets for shiitake are in large cities, however, new markets are likely to develop (Cotter et al. 1986). Shiitake is prized for its flavor and

medicinal properties and has experienced the greatest increase in demand of all cultivated mushrooms. Since the 1940s world demand has been second only to the common white mushroom (*Agaricus brunnesceus*). Shiitake is a good source of protein, vitamin D, B vitamins, and minerals (Binding 1972) and is also used in biopulping, medical research, and textile dying.

Although shiitake is a cultivated mushroom, it has important potential as an NTFP because it can be cultivated in forest areas and incorporated into agroforestry systems. Shiitake is cultivated by inoculating logs with shiitake spores and allowing six months for the fungus to develop and the mushroom to appear. Oak logs, especially white oak logs, provide the best growing substrate for shiitake mushrooms (Rafats 1970). Oak is a common tree species in southwest Virginia's Appalachian hardwood forests, which gives potential to shiitake cultivation in the region.

9.3.4 Value addition

Several options for value addition exist for mushrooms. Fresh mushrooms are the simplest product to market because they are only picked and cleaned. However, quick and efficient marketing or refrigerated transport are necessary because mushrooms are highly perishable. Fresh mushrooms can't be stored more than twenty-four hours at room temperature or one to two weeks at low temperature (0 °C). Mushroom canning prevents spoilage and is a common method of mushroom processing. A majority of the total mushroom crop in the United States is used by frozen food companies and the soup canning industry (Binding 1972). Dehydration is also a frequent form of value addition for mushrooms.

9.3.5 Marketing

Mushroom cultivation as a commercial business depends highly on efficient marketing. Mushroom quality can degrade quickly after picking and spoilage may result. Also, a crop

of mushrooms may mature at the same time and the collector or grower must act quickly to market a high volume of mushrooms. Collectors or growers from rural areas must locate and travel to main markets in urban areas. Many devote as much time to marketing mushrooms as to production and may drive long distances to service customers (Dix, Freed, and Buck 1996). However, as the mushroom market expands in North America and Europe increased demand may enable growers to more easily market their mushrooms. Potential for mushroom cultivation and marketing exists in southwest Virginia because of its suitable climate and proximity to large urban markets in the eastern United States.